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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,197	01/08/2001	Werner Lehner	31833-169020 RK	4843

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EXAMINER

STREGE, JOHN B

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 02/09/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/755,197

Applicant(s)

LEHNER ET AL.

Examiner

John B Strege

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/8/01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43-89 is/are pending in the application.
- 4a) Of the above claim(s) 43-69, 78-89 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 70-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Group II in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 43-69, and 78-89 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Examiner erroneously failed to list claims 61-67 as part of Group I drawn to a warning indication (page 3 of action mailed 11/25/03). If the claims of Group I are chosen for examination, then they are subject to the species restriction as reviewed in paragraph 1 of the previous action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fembok USPN 6,075,238.

Fembok discloses a device for monitoring danger areas around machines, security areas, etc. (col. 1 lines 5-6). A CCD camera (8 figure 1) is disclosed that

continuously monitors an area (col. 3 lines 44-48). The CCD camera reads color image information of the scenery, and a signal processing means 10 (evaluation unit) detects the color difference between the background (non-endangered objects) and an intruding object (endangered object) (col. 4 lines 6-20). If an intruding object is detected in the monitored area the signal processing means "will for example turn off the machine being monitored" (col. 4 lines 11-12).

Fembok does not explicitly disclose evaluating the enabling unit if no endangered object is located in the protection zone. However, a machine is present in the monitored area, which is capable of being disabled, thus it is logical that before being disabled it must have been enabled. Therefore if nothing is detected in the monitored area and as a result the signal processing means does not disable the machine, it is in effect maintaining the machine in a state of enablement. It would be obvious for the signal processing means to enable the evaluation unit if no endangered object is present. The motivation for this would be to allow the machine to serve its purpose if there are no dangerous objects near its functioning parts. Therefore it would have been obvious to one of ordinary skill in the art to use the signal processing means of Fembock to enable the working element if no endangered element is located in the protection zone.

3. Claims 71-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fembok USPN 6,075,238 in view of Hunke USPN 5,912,980.

Claim 71 discloses that the image generated by the camera is read into the evaluation unit in the form of a pixel matrix with different color values. Fembock takes color images of the scene with a CCD camera, therefore although it is not explicitly

disclosed, it is highly likely that the camera generates a pixel matrix. It is well known in the art to generate a pixel matrix with a camera.

Hunke discloses a system for locating and tracking an object in a scene using a camera (col. 1 lines 5-10). The following advantages are stated with his invention. The system can acquire and track targets automatically, and in an unsupervised manner (col. 3 lines 27-33). The system acquires and tracks multiple targets simultaneously (col. 3 lines 36-37). The system is capable of rapid adjustments to changing lighting conditions and appearance of the tracked target, such as changes in the orientation (col. 3 lines 37-40). It is explicitly disclosed that the images obtained from the camera are represented as a pixel matrix of RGB values in the internal memory of a computer system (col. 8 lines 1-3).

Claim 72 discloses assessing the color values with a threshold-value unit and creating binary images based on the assessment with the threshold-value unit. Fembock does not go into detail as to how the signal processing means works other than that it reads the color values from the camera to determine if an intruding object is present (col. 4 lines 6-20). Therefore Fembock does not explicitly disclose assessing the color values with a threshold-value or creating binary images based on the threshold-value unit, although it is possible that his invention does the same.

Claim 73 discloses that the threshold-value unit is a component of a neural network. Fembock does not explicitly disclose this.

Hunke discloses assessing the color values of a scene with a threshold value to classify a designated target color within the scene (at least col. 9 lines 25-30). After

classifying the target based on the color values a neural network is disclosed which uses this general target color classification (at least col. 13 lines 15-17, and col. 13 lines 54-57). Based on the target pixels found by assessing the colors a binary matrix is created (col. 14 lines 10-11).

Claims 74-76 disclose associating three color values of the base colors of red, green and blue with each pixel of the image, assigning the color values weight factors, creating a linear combination from the color values using the weight factor, assessing the linear combination of color values using a threshold value, determining the weight factors through a learning process, and specifying the endangered object as a specific color. Fembock does not explicitly disclose this.

As discussed above Hunke discloses a pixel matrix of RGB values (col. 8 lines 1-3). The color values are classified with different weights as being either a target color or a non-target color (col. 8 lines 14-18). A linear combination is created from a general target color classifier in order to create an individual target color classifier (col. 10 lines 65-67). This function is used to determine a threshold to track the target, and all pixels that are not the color of the individual target color are set to white (col. 10 lines 25-40). In regards to claim 75 a neural network is disclosed that allows the network to be trained by example (col. 14 lines 24-25). In regards to claim 76 Hunke explicitly states, "general target class colors are colors typical for the predetermined target class" (col. 6 lines 8-9).

Fembock and Hunke are analogous art because they are from the same field of endeavor of detecting an object in an area, and they both deal with color processing.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Fembock and Hunke in order to obtain a method for detecting and tracking an endangered object in a monitoring area using the various limitations discussed above. One motivation would be to allow the system to not only detect an intrusive object but also to be able to track it automatically. Hunke further states an advantage of tracking is that, "confusion with similar colors in the background can be avoided by considering motion as an additional feature" (col. 7 lines 60-67). Thus, the motivation for Fembock to use tracking as disclosed by Hunke would be to avoid confusion of the color of the intruding object with the background or non-endangered objects. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Fembock and Hunke in order to obtain the invention as specified in claims 71-76.

4. Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fembock USPN 6,075,238 in view of Hunke USPN 5,912,980 and further in view of Bloomberg USPN 5,202,933.

Claim 77 discloses forming a connected region and eliminating individual pixels in a background around the connected region using morphological operations. Fembock does not explicitly disclose this.

Bloomberg discloses a method using morphological operation to separate graphics in an image and to eliminate noise from images (at least col 1 lines 18-21 and col. 9 lines 40-42). Bloomberg discloses segmenting a binary image into regions such

that parts may be sent to a graphics recognizer (col. 1 lines 61-64). Morphological operators are used to eliminate noise pixels as can be seen in figures 13a and 13b.

Fembock, Hunke, and Bloomberg are all analogous art because they are all deal with detecting an object in an image.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Fembock, Hunke, and Bloomberg in order to obtain a device which monitors an area and uses morphological operations. It is well known in the art to use morphological operations to reduce noise. Thus a motivation for combining Fembock, Hunke, and Bloomberg would be to eliminate the noise that occur in the images of the working element to reduce the possibilities of a false positive being detected by the device. Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to combine Fembock, Hunke, and Bloomberg in order to obtain the invention as specified in claim 77.

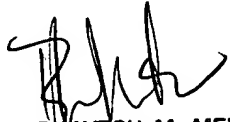
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Strege whose telephone number is (703) 305-8679. The examiner can normally be reached Monday-Friday between the hours of 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 2625

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.



BHAVESH M. MEHTA
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